

REMARKS

This is in response to the Office Action mailed on October 17, 2005. Applicant has canceled claims 2, 3, 5, 7, 9, 10, 11, 13, 14, 17, and 19-30. Applicant has amended these claims and represents them as new claims 31-53.

In the Office Action, the specification was objected to as not appearing to be complete with regard to the elected species shown in FIGS. 18A, 18B with respect to the discussion describing the tapered bearings 766, 768, 780, 782, and 784. Additionally, claims 2, 3, 5, 7, 9, 11, 13, 17, 19, and 20 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In regards to claim 2, “a variable drag tapered bearing”, and in regards to claim 7, the “means for providing a variable axial force” were identified as being insufficiently taught by the specification. Claims 2, 5, 7, 9, 15, 19, 20, 29, and 30 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,409,315 to Wichers, et al. (“Wichers”). Claims 3 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wichers in view of U.S. Patent No. 3,601,598 to Horn. Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Wichers in view of U.S. Patent No. 2,986,395 to Sheftel. Claims 21-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wichers in view of U.S. Patent No. 6,299,259 to MacKarvich.

Objection to The Specification

The disclosure was objected to as appearing to be incomplete with regard to the tapered bearings 766, 768, 780, 782 and 784. It was suggested that the elements should be more fully described including individual element descriptions. Applicant respectfully submits that tapered bearings 766, 768, 780, 782, and 784 that are shown in FIGS. 18A and 18B are identified in the specification as utilizing axle 700 as part of their respective tapered bearing systems. (Specification, p. 11:12-18). Tapered axle 700 is identified and further described in the specification with regard to FIGS. 17A-17D. (Specification, p. 10:22 - p. 11:11). Axle 700 is also identified as an alternative component to tapered axle 110 that is shown and described in FIGS. 8A-8C. (Specification, p. 10:24 - p. 11:2). Tapered axle 110 is further

described in the detailed description with regard to FIGS. 1A-1C and FIGS. 8A-12. In particular, FIGS. 8A-12 and the associated discussion describe the components of the tapered bearings that are common to tapered axle 110 and 700, which are the subject of the invention. (Specification, p. 7:15 - p. 9:16). Thus, Applicant respectfully submits that the tapered bearings are sufficiently described in the specification and respectfully requests that the objection to the specification be withdrawn.

Rejections Under 35 U.S.C. § 112

Applicant has included the term “adjustable” in claims 31-55 and removed the term “variable” from the claims. Applicant respectfully submits that claims 31-53 comply with the written description requirement.

Rejections Under 35 U.S.C. §§ 102 and 103

New claim 31 has been submitted to clarify the distinction between the present invention and that disclosed in Wichers. Claim 31 is directed to an articulated linkage that includes an adjustable drag tapered bearing for providing selectable drag pivotal movement about a first pivot axis. The selectable drag pivotal movement is provided by an adjustment mechanism that is adjustably secured to the tapered spindle to adjust the compression between the tapered bore and the tapered spindle.

Wichers does not show, disclose, or teach an adjustable drag tapered bearing that provides selectable drag pivotal movement between its tapered surfaces. (Pfister Decl., ¶¶ 12, 14, and 16). Rather, Wichers discloses a constant drag or frictional force between its tapered surfaces 32 and 66 as well as 86 and 88 that is created by the compression of coil spring 42. (Pfister Decl., ¶¶ 5, 10, and 11). Wichers is directed at carrying large loads on relatively long arms and providing a sufficient drag or frictional force between its tapered surfaces to maintain the relative position between the arms, yet not so much drag or frictional force to prevent movement of one arm relative to the other. (Pfister Decl., ¶¶ 3, 14, and 16). There is no showing, disclosure, or teaching that fastening element 72 could be loosened to adjust the drag or frictional force between the tapered surfaces of Wichers. (Pfister Decl., ¶¶ 12, 14, and 16). Rather, such a reading is contrary to the disclosure and teaching of Wichers. (Pfister Decl., ¶¶ 13-16).

Wichers indicates that the fastening element 72 includes a smooth rod-like portion 104 which terminates in a step down shoulder 106 that is bottomed out or contacts lower end 108 of the receptacle 68 to clamp central member 24 between the first and second shell-like members 58 and 92, respectively. (Pfister Decl., ¶¶ 7, 8). Equivalent fastening means are identified as a permanent rivet in Wichers. (Pfister Decl., ¶ 9).

Additionally, loosening the fastening means 72 would not appreciably adjust the drag or frictional forces between the tapered surfaces of Wichers because the coil spring 42 would still be under compression and provide a relatively constant force biasing the exterior conical surfaces 32 and 86 against the interior conical surfaces 66 and 88, respectively. (Pfister Decl., ¶ 13). Loosening the fastening element 72 would also likely unseat the pair of laterally extending ears 52 of conically tapered bearing member 50 from the notches 48 and thereby allow rotation between bearing member 50 and protrusion 30 as well as allow separation or gaps between the first and second shell-like members 58 and 92, respectively, and the central member 24. (Pfister Decl., ¶¶ 13, 15). Such a reading is contrary to the invention disclosed in Wichers. The other cited references also do not show, teach or suggest the limitations of independent claim 31 and therefore claim 31 is patentable over the cited references.

Claims 32-41 depend from independent claim 31. As previously discussed, the cited references do disclose, teach, or suggest the limitations of claim 31. Therefore, the cited references do not disclose, teach, or suggest the limitations of claims 32-41 and claims 32-41 are allowable over the cited references.

Claim 42 is directed toward an articulated linkage that includes an adjustable drag tapered bearing for providing selectable drag pivotal movement. In particular, claim 42 includes a means for providing an adjustable axial force between the tapered spindle and the tapered bore. As disclosed above, neither Wichers nor the cited references show, disclose, or teach the capability to adjust the amount of drag or frictional force between tapered surfaces. As a result, claim 42 is allowable over the cited references.

Claims 43-52 depend from independent claim 42. As discussed above, claim 42 is allowable over the cited references. Thus, claims 43-52 are also allowable over the cited references.

Claim 54 is directed to an articulated linkage that includes a first adjustable drag tapered bearing that provides selectable drag pivotal movement. The selectable drag pivotal movement is provided by a drag adjustment screw that extends from a tapered spindle, through a first support element (which carries a tapered bore) through a hole of a tension cap and is engaged by a fastener. The compression between the tapered spindle and tapered bore is adjusted by changing the relative position of the fastener (which engages the drag adjustment screw) and the tapered spindle. As discussed above, neither Wichers nor the cited references disclose an adjustable drag tapered bearing. Additionally, neither Wichers nor the cited references disclose a drag adjustment screw that extends from the tapered spindle or through a tension cap and which applies pressure to a first support element to compress the tapered bore and tapered spindle together. Claim 54 is therefore allowable over the cited references.

Claim 55 depends from independent claim 54. As discussed above, the cited references do not disclose, teach, or suggest the limitations of claim 54. Therefore, the cited references do not disclose, teach, or suggest the limitations of claim 55. Thus, claim 55 is allowable over the cited references.

CONCLUSION

Applicant has attempted in earnest to address the issues raised in the Office Action of October 17, 2005. In view of the foregoing, Applicant requests notice of allowability for all pending claims 31-55.

The Commissioner is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 11-0982. A duplicate copy of this communication is enclosed

Respectfully submitted,
KINNEY & LANGE, P.A.

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By: Michael J. Pape
Michael J. Pape, Reg. No. 45,971
THE KINNEY & LANGE BUILDING
312 South Third Street
Minneapolis, MN 55415-1002
Telephone: (612) 339-1863
Fax: (612) 339-6580

MJP:kmm